

Oct 26

U/R

OK 9/16/17

Work Order ID 148125

148125

Page 1

Friday, June 24, 2016 2:05:46 PM

Item ID: D119-646-041 Accept *N900040100* Setup Start *NS1*
Revision ID: URF 15-560 Stop *NS2*
Item Name: Replacement Skidtube with Wearpads, Fits LH or RH
Start Date: 9/1/2016 Start Qty: 1.00 *1* Cust Item ID:
Required Date: 9/23/2016 Req'd Qty: 1.00 *1* Customer:
Reference:

Approvals: Process Plan: em Date: 10/06/24 Tooling: _____ Date: _____ Run Start *NR1*
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D3887-041	D
IIN-D119-646	C

100

0.00

100

DC

Memo

0.00

Doc.Control -USB or Paperwork

Photocopy bluefile & type labels per PPP D119-646-041 CHG004

N/A

110

0.00

110

Skidtubes

Memo

0.00

Skidtubes

1- inspect Mat'L D2500-1-190 for damage
2-Cut tube to length as per dwg D3887 (154.8")
3- Ensure squareness of ends and scribe batch#

16-9-7 MG

Work Order ID 148125

Friday, June 24, 2016 2:05:46 PM

148125

Page 3

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Required Date: 9/23/2016 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

130

130

Skidtubes

Skidtubes

Memo

1- Install drill Jig DT9477 drill X-bolt spacer pilot holes using 3/16" drill first side only.

2- 2nd side, locating from first saddle holes use DT9861 A/B to drill 2nd side fwd saddle holes.

3- 2nd side locating from fwd saddle drill remaining crossbolt spacer holes using DT9477

4- Open crossbolt spacer holes to finished size as per dwg D3887 (section D-D and E-E) ***DO NOT OPEN FWD Saddles Holes***

5- Deburr, blow out chips from inside of tube.

6- Bond web in place as per Dwg D3887 & QSI 015.

A/RSikaflex-291

Sikaflex expire date:

Start: _____ Time: _____

Finish: _____ Time: _____

***** (Adhere for 12 hours) *****

16-9-19 

Work Order ID 148125***148125***

Page 4

Friday, June 24, 2016 2:05:46 PM

Item ID: D119-646-041 Accept ***N900040100*** Setup Start ***NS1***
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Start Date: 9/1/2016 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 9/23/2016 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
135	QC5- Inspect part completeness to step on W/O	0.00							
135									
QC	Memo	0.00							
Quality Control									

DAS
18
9-89

/ 0 16-09-20

Work Order ID 148125

Friday, June 24, 2016 2:05:46 PM

148125

Page 5

Item ID: D119-646-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: URF 15-560 Stop ***NS2***
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Start Date: 9/1/2016 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 9/23/2016 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140		0.00							
140 Skidtubes		0.00							
Skidtubes	Memo 1- Bend FWD end of tube using bender 1 and FOLIO 31 bend prog. D3887.***Must use bending aid DT9544, ensure proper positioning*** 2- Cut FWD end of tube as per dwg D3887.***Verify measurement*** 3- Buff out marks left from bending 4- Drill FWD cap holes using DT8215. Open FWD & AFT cap holes to 0.208" 5- Open FWD saddle holes to finished size as per dwg D3887 6- Drill FWD x-bolt spacer holes using DT9816 and open to finished size.(verify measurement) 7- Drill Tow ring hole, using DT10047 locate from FWD saddle hole.(verify measurement). Open to finished size. 8- Drill 1.87" and 3.74 holes using DT10045 A&B locate from FWD saddle hole. (verify measurement) as per dwg. 9- C'sink FWD cap hole as per detail "C" 10- Drill holes for wearpads using DT8931, open to 0.297". 11- Countersink crossbolt spacer holes, and prepare tube for welding, deburr 12- Deburr and blow out chips from inside of tube.								

★
SEE
Attached

5.07"

16-9-20 [Signature]

16-9-28 [Signature]

Work Order ID 148125

Friday, June 24, 2016 2:05:46 PM

148125

Page 6

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Start Date: 9/1/2016 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 9/23/2016 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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150

QC5- Inspect part completeness to step on W/O

0.00

150

QC

Memo

0.00

Quality Control

DAS
18
9-881 0 161006

Work Order ID 148125

Friday, June 24, 2016 2:05:46 PM

148125

Page 7

Item ID: D119-646-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: URF 15-560 Stop ***NS2***
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Start Date: 9/1/2016 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 9/23/2016 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160		0.00							
160									
Skidtubes	Memo	0.00							
Skidtubes	NOTE:TACK IN 2 MOST FWD X-BOLT SPACERS AND TEST FIT FWD GROUND HANDELING FIXTURE,IF FIXTURE FITS WELL THEN PROCEED. FIXTURE DT10091.								
	1-Insert crossbolt spacers. Weld as per QSI 004 and Dwg D3887. Remember to back drill each hole before welding the other side. Use aluminum rod A/RAluminum Rod MB4026								
	2-Grind cross bolt welds flush as per Dwg D3887. Ensure no pin hole.								
	3-Counterbore 5/16" x 0.750" deep as per Dwg D3887.								
	4- Deburr & Scribe batch # on Aft end of tube.								
170	QC5- Inspect part completeness to step on W/O	0.00							
170									
QC	Memo	0.00							
Quality Control	TEST FIT USING FIXTURE DT10091.								

DAS
38
9-89

OCT 14 2016

Work Order ID 148125

Friday, June 24, 2016 2:05:46 PM

148125

Page 8

Item ID: D119-646-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: URF 15-560 Stop ***NS2***
Item Name: Replacement Skidtube with Wearpads, Fits LH or RH
Start Date: 9/1/2016 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 9/23/2016 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
180 *180* QC Quality Control	QC10- Inspect visual per QSI004- ground welds Memo	0.00 0.00				1			38 9-89 OCT 14 2016
190 *190* HandFinish Hand Finishing	Pressure Wash per QSI005 4.3 Memo Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch.	0.00 0.00							1x of all indicated
200 *200* Powdercoat Powder Coating	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum M 135418. Memo START TIME: 8:45 OVEN TEMPERATURE: 320° FINISH TIME: 9:15	0.00 0.00							1 of 161017. 34 9-89

SEE Attached

Friday, June 24, 2016 2:05:46 PM

Page 9

Quality Control

1x d ML 16/01/17

12 of 16/10/17

16 B10-17. DAS 34 9-89

Work Order ID 148125

Friday, June 24, 2016 2:05:46 PM

148125

Page 10

Item ID: D119-646-041 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: URF 15-560 Stop ***NS2***
Item Name: Replacement Skidtube with Wearpads, Fits LH or RH
Start Date: 9/1/2016 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 9/23/2016 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

240

0.00

240

HandFinish

Hand Finishing

Memo

0.00

1-Install wearpads, gaskets as per Dwg D3887. Put sikaflex in insert before installing bolts and washers

A/R Sikaflex-240/-291

Sikaflex expire date:

M135376
16/12

2-assemble o'ring to plug as per dwg D3492 and apply o'ring lube

A/R 55-o'ring lube batch:

M135473 RTU 590 M135426 16/10

3 -Inspect for foreign objects as per QSI 024

4 -Install Aft Cap and seal with Sikaflex. Clean excess adhesive.

A/R Sikaflex-240/-291

Sikaflex expire date:

M135376
16/12

245

QC5- Inspect part completeness to step on W/O

0.00

245

QC

Quality Control

Memo

0.00

16-10-18

Work Order ID 148125

Friday, June 24, 2016 2:05:46 PM

148125

Page 11

Item ID: D119-646-041 Accept ***N900040100***
Revision ID: URF 15-560
Item Name: Replacement Skidtube with Wearpads, Fits LH or RH
Start Date: 9/1/2016 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 9/23/2016 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Setup Start ***NS1***
Stop ***NS2***

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***
Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
250 *250* HandFinish Hand Finishing	Wing Walk as per dwg QSI005 4.4 Batch <u>M135510</u> Memo	0.00 0.00				<u>x1</u>	<u>d</u>	<u>16/10/17</u>	
251 *251* QC Quality Control	QC3- Inspect Part Finish Memo	0.00 0.00				<u>1</u>			DAS 38 9-89 OCT 18 2016
260 *260* Packaging Packaging	Identify as per dwg & Stock Location <u>n/o</u> Memo <u>148085</u>	0.00 0.00				<u>1x</u>		<u>16/10/24</u>	DAS 36 9-89

Work Order ID 148125

Friday, June 24, 2016 2:05:46 PM

148125

Page 12

Item ID: D119-646-041**Accept*****N900040100*****Setup****Start*****NS1*****Revision ID:** URF 15-560**Item Name:** Replacement Skidtube with Wearpads, Fits LH or RH**Stop*****NS2*****Start Date:** 9/1/2016 **Start Qty:** 1.00***1*****Cust Item ID:****Required Date:** 9/23/2016 **Req'd Qty:** 1.00***1*****Customer:****Reference:****Approvals:** **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____**QC:** _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____**Run****Start*****NR1*****Stop*****NR2*****Sequence ID/
Work Center ID****Operation
Description****Set Up/
Run Hours****Tool ID****Tool #****Plan
Code****Accept
Qty****Reject
Qty****Reject
Number****Insp.
Stamp**

270

QC21- Final Inspection - Work Order Release

0.00

270

QC

Memo

0.00

Quality Control

DAS
21
8-89

OCT 24 2016

Picklist Print

Friday, June 24, 2016 2:05:45 PM

Page 1

Work Order ID: 148125

148125

Parent Item: D119-646-041

D119-646-041

Parent Item Name: Replacement Skidtube with Wearpads, Fits LH or RH

Start Date: 9/1/2016

Required Date: 9/23/2016

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP RevA: New issue DD verified by:EC
10.02.22 per PAR 09-043 EC verified by:DD IPP rev B
(DEOD3887-B-1)(ecn 12-675) DD verf:JLM IPP REV:D 12.11.05
chg003 ECN13-534 DD verf:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2500-1-190		Manufactured	No			110	Each	30.0000	1	1			
D2500-1-190									**				
Ext'n -I' Beam Tube 4"													
					<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>						
					LG002 145247	30				1			
					140538	30							
D2579		Manufactured	No			140	Each	177.0000	2	2			
D2579									**				
Crossbolt Spacer													
					<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>						
					LG001	177							
					123997	1							
					141711	176				2			
D2855-3		Manufactured	No			240	Each	1.0000	2	2			
D2855-3									**				
Cap													
					<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>						
					FP001	1							
					137525	1				13142564			
										x2			

Picklist Print

Friday, June 24, 2016 2:05:45 PM

Page 2

Work Order ID: 148125

148125

Parent Item: D119-646-041

D119-646-041

Parent Item Name: Replacement Skidtube with Wearpads, Fits LH or RH

Start Date: 9/1/2016

Required Date: 9/23/2016

Start Qty: 1.00

Required Qty: 1.00

NAS1611-005

Purchased

No

240

Each

407.0000

16

16

NAS1611-005******

O-RING

LocationLoc QtyLoc Code

FP001

407

M1133465

x16

m129198

11

m133498

196

m134816

200

D3492-5

Manufactured

No

240

Each

196.0000

16

16

D3492-5******

Plug

LocationLoc QtyLoc Code

FP001

196

B145446

x16

133396

8

136396

6

138198

2

142818

180

D3672-1

Manufactured

No

240

Each

1,016.000

2

2

D3672-1******

Washer, Phenolic

LocationLoc QtyLoc Code

FG

10

85222

10

FP001

14

112218

14

ST049

492

134785

492

ST051A

500

147077

500

Friday, June 24, 2016 2:05:45 PM

Shop Packet Print

Page 2

Picklist Print

Friday, June 24, 2016 2:05:45 PM

Page 3

Work Order ID: 148125

148125

Parent Item: D119-646-041

D119-646-041

Parent Item Name: Replacement Skidtube with Wearpads, Fits LH or RH

Start Date: 9/1/2016

Required Date: 9/23/2016

Start Qty: 1.00

Required Qty: 1.00

D3681-1

Manufactured No

160

Each

70.0000

8

8

D3681-1

Spacer

BE160929
8146201.8

Location

Loc Qty

Loc Code

LG001

70

142904

70

D3847-1

Manufactured No

240

Each

51.0000

5

5

D3847-1

Wearpad

ll 16/10/17

Location

Loc Qty

Loc Code

FP001

51

138338

10

142745

25

142854

2

146614

14

B148686

X5

D3847-11

Manufactured No

240

Each

38.0000

1

1

D3847-11

Wearpad

ll 16/10/17

Location

Loc Qty

Loc Code

FP001

38

138418

1

142783

24

146945

13

X1

D3885-1

Manufactured No

140

Each

19.0000

1

1

D3885-1

Standard Web

16-9-19 LH

Location

Loc Qty

Loc Code

LG002

19

142573

19

D

146232

Friday, June 24, 2016 2:05:45 PM

Shop Packet Print

Page 3

Picklist Print

Friday, June 24, 2016 2:05:46 PM

Page 4

Work Order ID: 148125

148125

Parent Item: D119-646-041

D119-646-041

Parent Item Name: Replacement Skidtube with Wearpads, Fits LH or RH

Start Date: 9/1/2016

Required Date: 9/23/2016

Start Qty: 1.00

Required Qty: 1.00

D3903-1

Manufactured No

160

Each

213.0000

12

12

D3903-1

Spacer

*BE 16-09-29
8148673 *12*

Location

Loc Qty

Loc Code

LG001

213

142730

213

ALS4-1032-130

AELS4-1032-130 Purchased

No

220

Each

3,138.000

30

30

ALS4-1032-130

Rivnut

ll 16/10/17

Location

Loc Qty

Loc Code

CCK005

1596

M134502

1596

M135442

x 30

FP001

552

M133077

122

M134502

430

ST556

990

M134502

990

AN3C5A

Purchased

No

240

Each

1,188.000

32

32

AN3C5A

Bolt

ll 16/10/17

Location

Loc Qty

Loc Code

FG

5

122800

5

M1135297

x 32

FP001

488

M134502

488

OVER002

300

M134955

300

ST350

395

M133234

1

M134676

394

Friday, June 24, 2016 2:05:46 PM

Shop Packet Print

Page 4

Picklist Print

Friday, June 24, 2016 2:05:46 PM

Page 5

Work Order ID: 148125

148125

Parent Item: D119-646-041

D119-646-041

Parent Item Name: Replacement Skidtube with Wearpads, Fits LH or RH

Start Date: 9/1/2016

Required Date: 9/23/2016

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0332R

Purchased

No

Each

5,760.000

32

NAS1149C0332R

WASHER

Location

Loc Qty

Loc Code

FP001

1758

m132930

1004

m134073

128

m134962

626

GA

141

m133284

141

ST266

3861

m134736

1861

m135046

2000

M135274

X32

MS24694-C52

Purchased

No

Each

69.0000

2

MS24694-C52

SCREW

Location

Loc Qty

Loc Code

FP001

63

m127059

17

m133855

46

ST287

6

124308

6

M135466

X2

DQA: _____ Date: _____

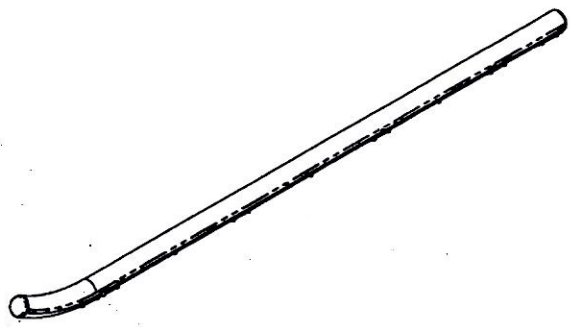


WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					



D3887-041 STANDARD SKIDTUBE ASSY WITH WEARPAD (SHOWN)
D3887-043 STANDARD SKIDTUBE ASSY WITH WEARPLATE (SIMILAR)
D3887-045 STANDARD SKIDTUBE ASSY WITH TRAINING WEARPLATE (SIMILAR)

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1 PRIOR TO INSERTING D3885-1 WEB
 POWDER COAT "WHITE" (4.3.5.1) PER DART QSI 005 4.3
 BLACK ANTI-SKID PAINT AS INDICATED TO 0.5 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D3887-041 = 32.0 lbs
 D3887-043 = 37.0 lbs
 D3887-045 = 38.1 lbs
- 8) WELD PER DART QSI 004
- 9) DAMAGE TOLERANCE ON FWD BEND:
 THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 8.5 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP 0.020" DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
- 10) INSERT D3885-1 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP
- 11) INSERT D3492-045 PLUG ASSY INTO Ø0.197 HOLES (BOTH SIDES OF TUBE)
- 12) USE DART DRILL TEMPLATE DT8931 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARPLATE INSERTS. INSTALL AELS-1032-130 INTO D3887-11 ONLY. INSTALL AN3C6A BOLTS AND NAS1149C0332R WASHERS WITH SIKAFLEX-241/-291.

ITEM	QTY -041	QTY -043	QTY -045	P/N	DESCRIPTION
1	X			D3887-041	STD SKIDTUBE ASSY WITH WEARPAD
2		X		D3887-043	STD SKIDTUBE ASSY WITH WEARPLATE
3			X	D3887-045	STD SKIDTUBE ASSY WITH TRAINING WEARPLATE
10	2	2	2	D2579	CROSS BOLT SPACER
11	2	2	2	D2865-3	CAP
12	16	16		D3492-045	PLUG ASSY
13	2	2	2	D3672-1	PHENOLIC WASHER
14	8	8	8	D3681-1	SPACER
17	5	5		D3847-1	WEARPAD
18	1	1		D3847-11	AFT WEARPAD
19		1		D3847-043	FWD WEARPLATE ASSY
20		1		D3847-045	CENTER WEARPLATE ASSY
21		1		D3847-047	AFT WEARPLATE ASSY
22			1	D3849-041	FWD TRAINING WEARPLATE ASSY
23			1	D3849-043	AFT WEARPLATE ASSY
24	1	1	1	D3885-1	STANDARD WEB
25	1	1		D3887-11	STANDARD SKIDTUBE
26			1	D3887-13	STANDARD SKIDTUBE
27	12	12	12	D3903-1	SPACER
28			16	D3904-1	WASHER
41	30	30		ALS-1032-130	INSERT
42	32	32	2	AN3C5A	BOLT
43			8	AN3C46A	BOLT
44	32	32		NAS1149C0332R	WASHER (OR AN980C10L)
45			8	MS21043-3	NUT
46	2	2	2	MS24894-C52	SCREW

RELEASED

UNDER REVIEW

2014 NOV 24
 ECN 14-528

15.04.30 URF15-560 AP

D	REVISED BEND TOLERANCES FOR MANUFACTURABILITY, 135.07 WAS 134.04 (ZN D5-8), ADD 5.07 (ZN C2-8), ADD 118.8 (ZN D5-8), DELETE GASKETS (BOM, SH 2)	DB	13.09.20
C	(SHT1, PL, ZN C2-2, C3-2, C4-2) ITEM 13, QTY 2 WAS 4, ITEM 42, QTY 32 WAS 34, ITEM 44, QTY 30 WAS 32, ADD ITEM 46, MS24894-C52 WAS AN3C5A, 2 PLCS (ZN C1-5, C1-6, S4-7) Ø0.291 CSK Ø0.305 X 100" WAS Ø0.214 THRU, ADDED DETAIL F (ZN C5-5, C5-6, B5-7), ADD ITEM 10, D2579 CROSS BOLT SPACER (ZN D4-1, A6-7)	DB	13.02.19
B	ALS-1032-130 WAS AELS-1032-130 (ZN C4-1, C5-7, C3-7); ADD DT8931 (ZN A5-1); ADD 134.04 (ZN C4-1, D2865-3) WAS D2579 (ZN D4-1, C7-2, C2-2, C7-3, C2-3, C7-4, C2-4); AN3C5A WAS AN3C4A (ZN C5-2, C2-2, C5-3, C2-3, C6-4, C2-4); Ø0.313 WAS Ø0.328 (ZN C4-5, C4-5, C2-7 & B5-7)	RF	09.06.30
A	NEW ISSUE	RF	09.03.30
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE USA, INC.	
DRAWN	DB	KENT, WA	
CHECKED		DRAWING NO.	REV. D
MFG. APPR.		D3887	SHEET 1 OF 8
APPROVED		TITLE	SCALE
DE APPR.		A119 STD SKIDTUBE ASSY	NTS
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w/o 148125

Em 16/06/24

AN3C5A BOLT
D3872-1 PHENOLIC WASHER
NAS1149C0332R WASHER
(1 PER SIDE)

SEAL WITH
SIKAFLEX-241/291

D2855-3 CAP

D3847-11
WEARPAD

BLACK ANTI-SKID TO 0.5
ABOVE LOCATION RIDGE
TYP

11
Ø0.187
8 PL PER SIDE
REF

AN3C5A BOLT
NAS1149C0332R WASHER
24 PL

PLUG UNUSED INSERTS WITH
AN3C5A BOLT
NAS1149C0332R WASHER
6 PL

D3847-1
WEARPAD
5 PL

D2855-3 CAP

SEAL WITH
SIKAFLEX-241/291

MS24894-C52 SCREW
(1 PER SIDE)

D3887-041 STANDARD SKIDTUBE ASSY WITH WEARPAD
(MAKE FROM D3887-11)

UNDER REVIEW

15.04.30 URF15-560 AP

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2014 NOV 24 *ap*

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MFG. APPR.		D3887	SHEET 2 OF 8
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AN3C5A BOLT
D3672-1 PHENOLIC WASHER
NAS1149C0332R WASHER
(1 PER SIDE)

SEAL WITH
SIKAFLEX-241/291

D2855-3 CAP

D3847-11
WEARPAD

D3847-047
AFT WEARPLATE ASSY

AN3C5A BOLT
NAS1149C0332R WASHER
30 PL

D3847-045
CENTER WEARPLATE ASSY

D3847-043
FWD WEARPLATE ASSY

D3847-1
WEARPAD
5 PL

BLACK ANTI-SKID TO 0.5
ABOVE LOCATION RIDGE
TYP

11
Ø 0.187
8 PL PER SIDE
REF

D2855-3 CAP

SEAL WITH
SIKAFLEX-241/291

MS24684-C52 SCREW
(1 PER SIDE)

D3887-043 STANDARD SKIDTUBE ASSY WITH WEARPLATE
(MAKE FROM D3887-11)

UNDER REVIEW

15.04.30 URF15-560 AP

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AN3C5A BOLT
D3572-1 PHENOLIC WASHER
NAS1149C0332R WASHER
(1 PER SIDE)

SEAL WITH
SIKAFLEX-241/291

D2855-3 CAP

AN3C46A BOLT
D3904-1 WASHER, 2 PL
MS21043-3 NUT
8 PL

D3849-043
AFT TRAINING WEARPLATE ASSY

BLACK ANTI-SKID TO 0.5
ABOVE LOCATION RIDGE
TYP

1.5 1.5 1.5 1.5

2.00 DISTANCE TO D3885-1 WEB

D3849-041
FWD TRAINING WEARPLATE ASSY

D2855-3 CAP

SEAL WITH
SIKAFLEX-241/291

MS24894-C52 SCREW
(1 PER SIDE)

UNDER REVIEW

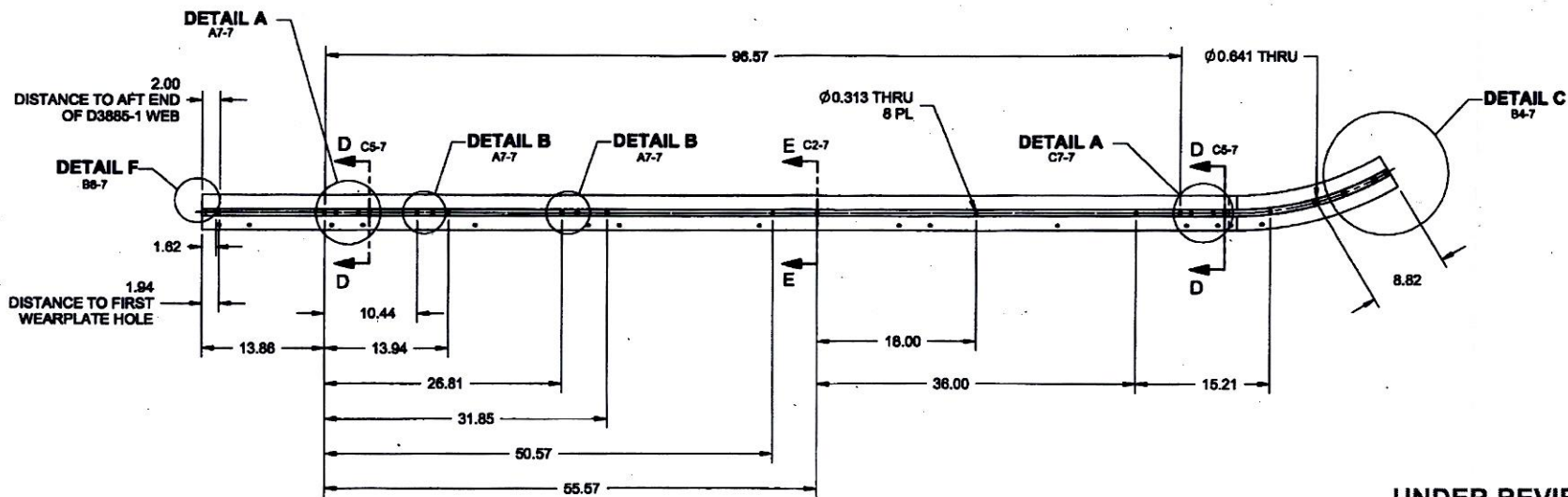
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D3887-045 STANDARD SKIDTUBE ASSY WITH TRAINING WEARPLATE
(MAKE FROM D3387-13)

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D3887-11 DRILLING DETAIL
(MAKE FROM D3887-1)

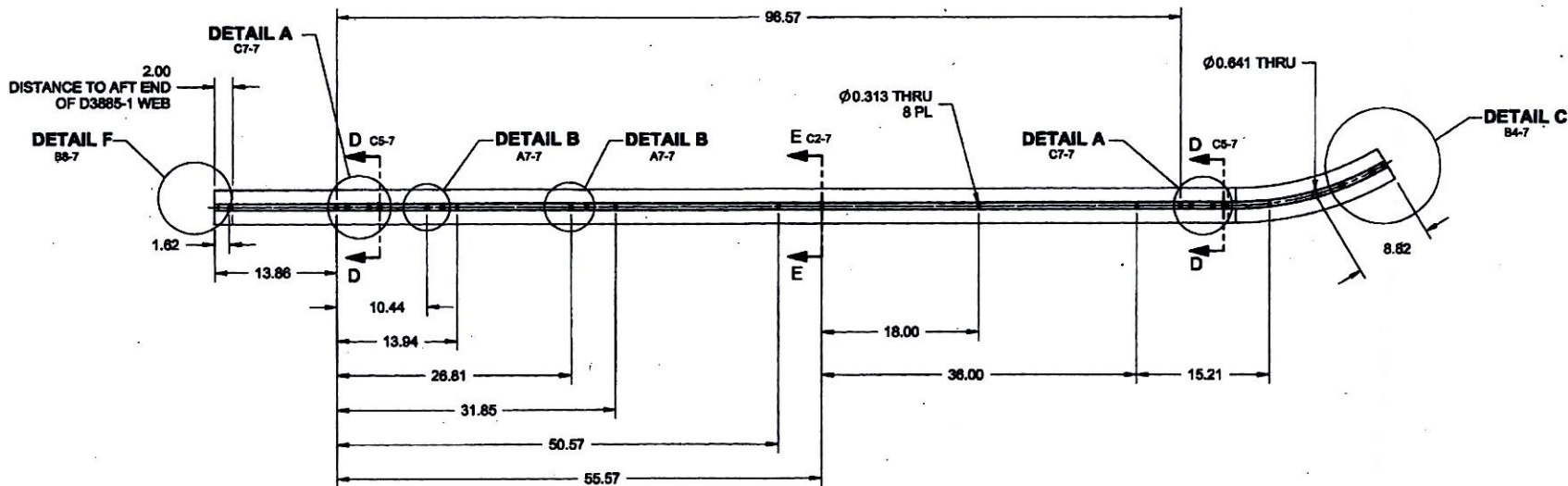
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D3887-13 DRILLING DETAIL
(MAKE FROM D3887-1)

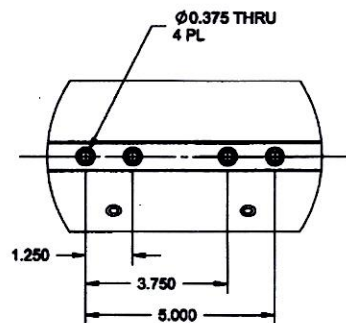
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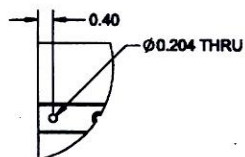
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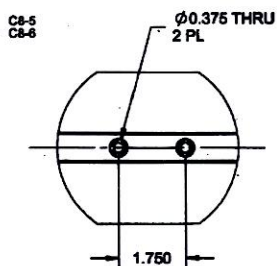


DETAIL A
SCALE 4X

D7-5
C3-5
D7-6
C3-6

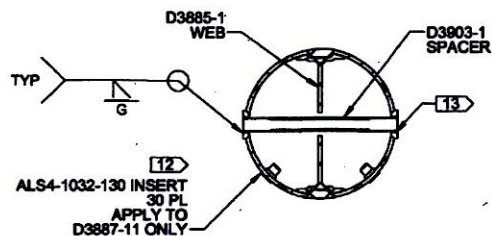


DETAIL F
SCALE 4X



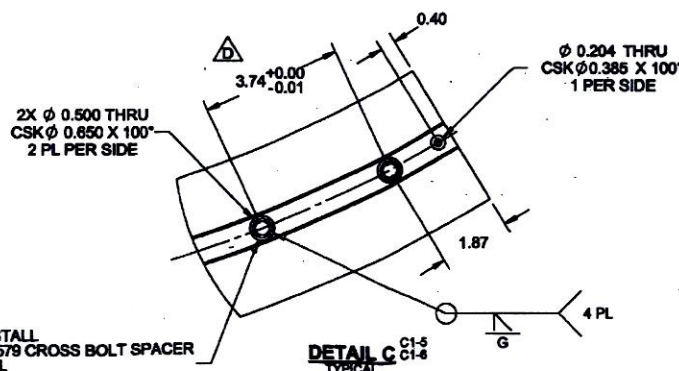
DETAIL B
SCALE 4X

C8-6
C5-6
C8-6
C5-6



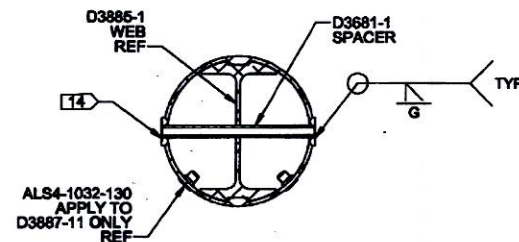
SECTION D-D
SCALE 4X
(FOR 12 X Ø0.375 HOLES
PER SKIDTUBE)

C7-5
C3-6
C7-8
C2-6



DETAIL C
SCALE 4X

C1-5
C1-4



SECTION E-E
SCALE 4X
(FOR 8 X Ø0.313 HOLES
PER SKIDTUBE)

C4-5
C4-6

NOTES:

13) AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.375 HOLES ONLY:

- i) CHAMFER HOLES Ø0.475 x 45°
- ii) INSERT D3803-1 SPACER
- iii) WELD INTO PLACE AND GRIND FLUSH
- iv) CBORE TO 0.313 x 0.75 DEEP
- v) DEBURR HOLES

14) AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.313 HOLES ONLY:

- vi) CHAMFER HOLES Ø0.354 x 45° OR 0.050 DEEP x 45° (BOTH SIDES)
- vii) INSERT D3681-1 SPACER
- viii) WELD INTO PLACE AND GRIND FLUSH
- ix) DEBURR HOLES

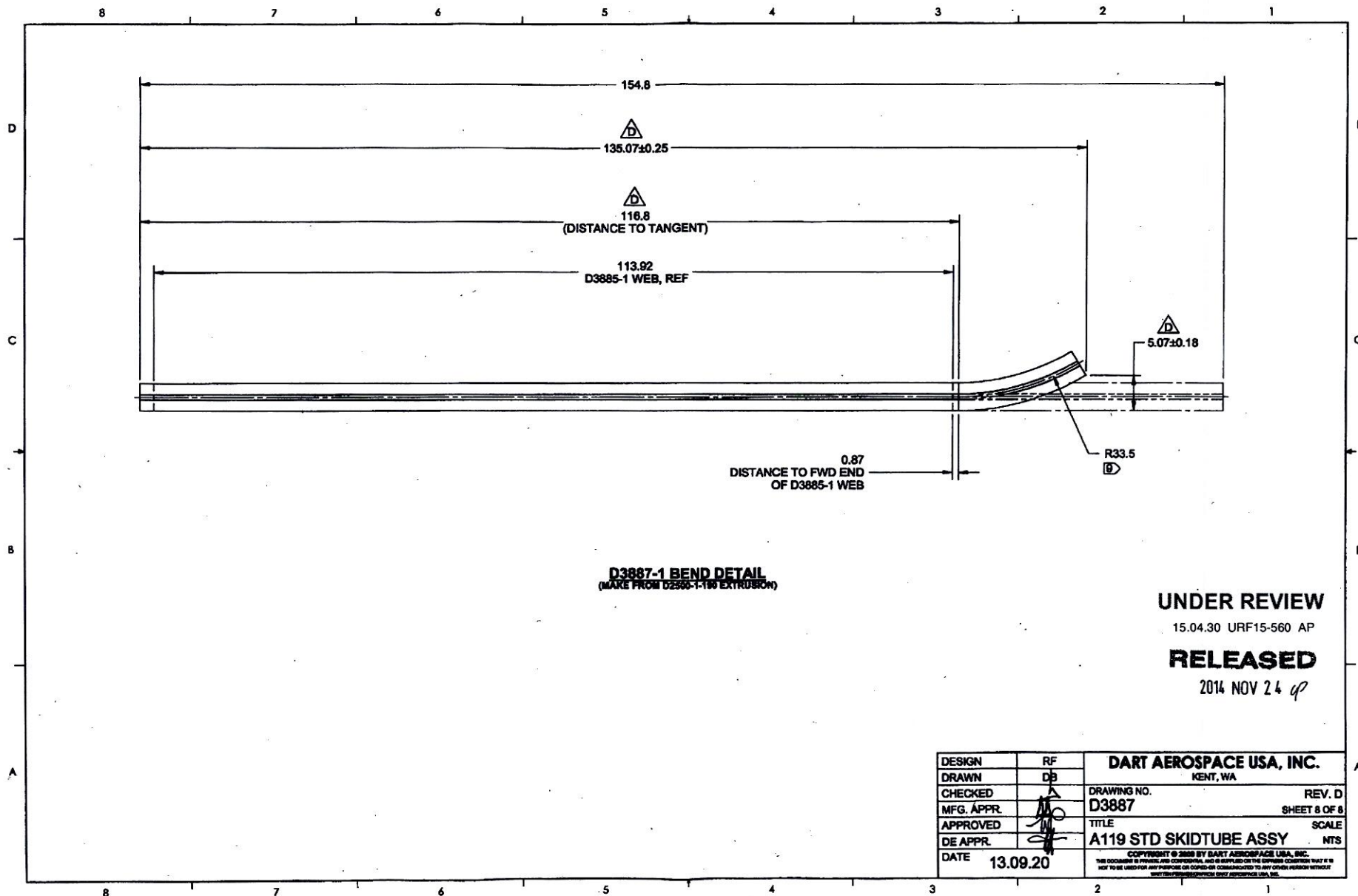
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4.89
[Signature]

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☒

Work Order: <u>148125</u> Part No. <u>D119-646-041</u> NCR No. _____		DISPOSITION Rework ☒ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube ☐</td> <td>Cross tube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☒</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>				Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☒	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐																																																									
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Date: <u>16/5/16</u>		Step #: <u>200</u>		QTY Effective: _____		MRB (QSI042) Approval <u>DAS</u> <u>12</u> <u>9-89</u> <u>16/7/17</u>																																																																									
Description Work Order Deviation				Disposition																																																																											
No powder coat on saddle region per customer request.				Acceptable per attached masking instructions				Completed By <u>16/10/17</u> <u>DAS</u> <u>34</u>																																																																							
								Lead hand / Supervisor Approval Verification																																																																							
								QC / QA Coordinator Approval																																																																							
Root Cause <table style="width:100%;"> <tr> <td>Environment ☐</td> <td>No Re-verification ☐</td> <td>Pressure/Forced ☐</td> <td>Temperature/Cure ☐</td> <td>Power Loss/Surge ☐</td> <td>Positioned Wrong ☐</td> </tr> <tr> <td>Design ☐</td> <td>Operator ☐</td> <td>Bending ☐</td> <td>Set-up ☐</td> <td>Folio/Program ☐</td> <td>Outside Dimensions ☐</td> </tr> <tr> <td>Doc/Data ☐</td> <td>Offset/Setup ☐</td> <td>Centre Not Concentric ☐</td> <td>BOM/Route ☐</td> <td>Grain ☐</td> <td>Over/Under tolerance ☐</td> </tr> <tr> <td>Equip/Tooling ☐</td> <td>Supplier ☐</td> <td>Cracks ☐</td> <td>Broken/Damage/Defect ☐</td> <td>Weld ☐</td> <td>Part Incorrect ☐</td> </tr> <tr> <td>Handling/Pre ☐</td> <td>Training ☐</td> <td>Crimp/Kink/Ripple/Wave ☐</td> <td>Inspection Incomplete/Unqualified ☐</td> <td>Wrong Stock Pulled ☐</td> <td>Part Lost/Missing ☐</td> </tr> <tr> <td>Material ☐</td> <td>Use for Testing ☐</td> <td>Cuffs ☐</td> <td>Contamination ☐</td> <td>Out of Sequence ☐</td> <td>Part Moved ☐</td> </tr> <tr> <td>Internal Transport ☐</td> <td>Poor Information ☐</td> <td>Crushing ☐</td> <td>Countersink ☐</td> <td>Off-set ☐</td> <td>Drawing ☐</td> </tr> <tr> <td>Tribal Knowledge ☐</td> <td>Rushing ☐</td> <td>Heat Treat ☐</td> <td>Cut Too Short ☐</td> <td>Mislabeled ☐</td> <td>Finish ☐</td> </tr> <tr> <td>LOA ☐</td> <td>Product Improvement ☐</td> <td>Wave/Twist in Tube ☐</td> <td>Instructions Incomplete/Unclear ☐</td> <td>Fit/Function ☐</td> <td>Misread ☐</td> </tr> <tr> <td>Substation ☐</td> <td>Process Improvement ☐</td> <td>Marks/Chatter ☐</td> <td>Drill Holes ☐</td> <td>Misaligned/off center ☐</td> <td>Turning Sequence ☐</td> </tr> <tr> <td>Past Expiry Date ☐</td> <td>Manufacturing Process ☐</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Misidentified ☐</td> <td>Past Due ☐</td> <td></td> <td></td> <td></td> <td></td> </tr> </table>				Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐					Misidentified ☐	Past Due ☐					FAULT CATEGORY OTHER: <u>Customer</u>			
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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

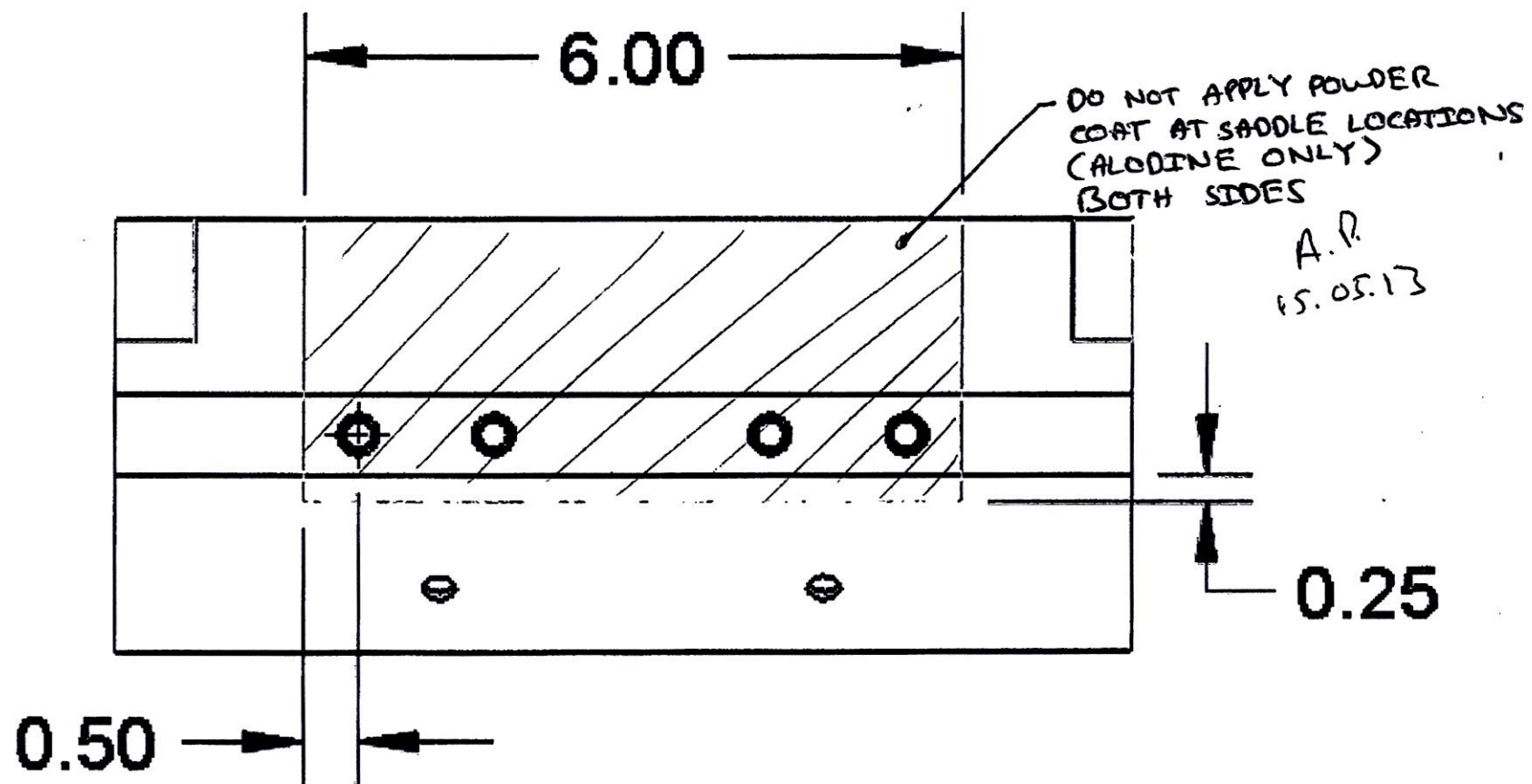
QA Closed: _____ Date: _____

Work Order update only



Work Order: <u>148125</u> Part No. <u>D119-646-041</u> NCR No. _____		DISPOSITION Rework ☒ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☒ Quality ☐ Other ☐					
Date: <u>16/3/16</u>		Step #: <u>240</u>		QTY Effective: _____		MRB (QSI042) Approval DAS 12 16/7/7 9-89			
Description Work Order Deviation				Disposition					
Plug unused holes with AN3C4A Bolts rather than AN3CSA Bolts.				Acceptable AN3C-4A / M135058 (x6)					
				Completed By <u>DAS 15 16/10/17 9-89</u> Lead hand / Supervisor Approval Verification					
				QC / QA Coordinator Approval					

Root Cause				FAULT CATEGORY							
Environment	☐	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong
Design	☐	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions
Doc/Data	☐	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance
Equip/Tooling	☐	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect
Handling/Pre	☐	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing
Material	☐	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved
Internal Transport	☐	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing
Tribal Knowledge	☐	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish
LOA	☐	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread
Substation	☐	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence
Past Expiry Date	☐	☐	Manufacturing Process	☐							
Misidentified	☐	☐	Past Due	☐	OTHER: _____						



DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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